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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,684	05/17/2006	Kim Tiow Ooi	7699P004	9621

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EXAMINER

PHASGE, ARUN S

ART UNIT	PAPER NUMBER
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1724

MAIL DATE	DELIVERY MODE
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01/20/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,684	Applicant(s) OOI ET AL.	
	Examiner Arun S. Phasge	Art Unit 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7,8,10-12,14-17,19,21,22,24,25,28-33 is/are pending in the application.
- 4a) Of the above claim(s) 1-5,7,8,10-12 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-17,19,21,22,24,25 and 28-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102/103

Claims 15-17, 19, 21-22, 24-25 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Galambos of record for reasons of record.

Galambos discloses an actuator comprising: a tube with an open end and an inner surface and at least partially filled with a liquid containing an electrolyte, the inner surface being electrically chargeable when in contact with the liquid; an electric field generator for generating a field along a lengthwise axis of the tube to induce a pressure in the liquid; an object in fluid communication with the liquid in the tube through the open end such that the pressure in the liquid exerts a force on the object; and wherein the force on the object is able to actuate the object (see col. 3, lines 10-25). The patent discloses the same type of tube, including the materials making up said tube (see col. 3, lines 25-40). The pressure is caused by an electroosmotic flow, which further teaches the use of generating a stronger electric field by the use of further electrodes (see col. 3, lines 40-53).

The Galambos patent further discloses the use of a plurality of spaced posts extending outward from at least one wall thereof to increase the surface area in the channel which would read upon the limitation presently added to the claims (see col. 2, lines 23-31).

Therefore, since the Galambos patent discloses each and every limitation the claims are anticipated. In the alternative, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Galambos by the teachings contained therein.

One having ordinary skill in the art would have been motivated to do this modification, because the Galambos teaches the use of a plurality of spaced posts to increase the surface area in the channel is a conventional modification used in the art in microfluidic devices.

Claims 28-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galambos as applied to claims above, and further in light of Komatsu et al. (Komatsu), U.S. Patent 5,362,213.

The Komatsu patent is provided to as evidence that the changing of the volume in a cylinder would render obvious the use of the piston and cylinder as claimed, because the patent teaches the piston effects the transmission of fluid by the changing of the inner volume of a cylinder.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Galambos by the teachings contained therein.

One having ordinary skill in the art would have been motivated to do this modification, because Galambos teaches the modification to the volume of the cylinder for the transmission of a fluid and the Komatsu patent provides evidence that such change is the volume of a cylinder is routinely obtained using a piston as claimed.

Response to Arguments

Applicant's arguments filed 9/24/10 have been fully considered but they are not persuasive.

Applicants argue that "Galambos discloses a surface-micromachined apparatus having a microchannel formed on a substrate from a plurality of deposited and patterned layers of polysilicon and silicon nitride. (Galambos, col. 1, line 66 to col. 2, line 5). Nowhere does Galambos disclose to use a porous material to form the surface-micromachined fluidic devices."

The plurality of deposited and patterned layers of polysilicon and silicon nitride would produce a cylinder having porous channels, since the pattern would produce raised surfaces upon the inner cylinder. In any event, as shown above, the patent

teaches the use of a plurality of posts extending into the cylinder from the surface which would read upon the claimed invention.

Applicants further argue that the Galambos patent teaches away from the claimed invention because, "Galambos describes, for example, at column 1, lines 52 to 55 that "an electroosmotic force can be produced to act upon a fluid without the need for a microporous dielectric medium as has been heretofore required." (Emphasis added)."

The sentence before the part quoted above, states "in some preferred embodiments of the present invention..."

Disclosure of reference must be considered for what it fairly teaches one of ordinary skill in the art, pertinence of non-preferred disclosure must likewise be reviewed in such light. In re Meinhardt, 157 U.S.P.Q. 270. All disclosures of the prior art including un-preferred embodiments are considered in determining obviousness. In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971).

Accordingly, the claims stand rejected.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun S. Phasge whose telephone number is (571) 272-1345. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Arun S. Phasge/
Primary Examiner, Art Unit 1724

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